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APPENDIX 24.

EQUIPMENT REPAIR TECHNICIAN

JUN 1 9 1980

APPLICATION OF A SYSTEM APPROACH U.S. NAVY MEDICAL DEPARTMENT EDUCATION AND TRAINING PROGRAMS FINAL REPORT

Prepared under Contract to OFFICE OF NAVAL RESEARCH U.S. DEPARTMENT OF THE NAVY

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Program Manager
Education and Training R&D
Bureau of Medicine and Surgery (Code 71G)

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currently designated Navy enlisted occupations, 20 Naval Enlisted Classification Codes (NEC's) were computerized. A set of 16 groupings that cover all designated occupations was developed so as to enhance the effectiveness of professionals and sub-professionals alike.

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FOREWORD

The project, "Application of a System Approach to the Navy Medical Department Education and Training Programs," was initiated in May of 1969 as a realistic, comprehensive response to certain objectives set forth in ADO 43-03X, and to memoranda from both the Secretary of Defense and the Assistant Secretary of Defense, Manpower and Reserve Affairs. The Secretary's concern was stated in his memorandum of 29 June 1965, "Innovation in Defense Training and Education." More specific concerns were stated in the Assistant Secretary's memorandum of 14 June 1968, "Application of a System Approach in the Development and Management of Training Courses." In this he called for "vigorous and imaginative effort," and an approach "characterized by an organized training program with precise goals and defined operational interrelation among instructional system components." He also noted, "Job analyses with task descriptions expressed in behavioristic terms are basic and essential to the development of precise training goals and learning objectives.'

The Project

System survey and analysis was conducted relative to all factors affecting education and training programs. Subsequently, a job-analysis sub-system was defined and developed incorporating a series of task inventories "... expressed in behavioristic terms ..." These inventories enabled the gathering of job activity data from enlisted job incumbents, and data relating to task sharing and delegation from officers of the Medical, Nurse and Dental Corps. A data management sub-system was devised to process incumbent data, then carry out needed analyses. The development of initial competency curricula based upon job analysis was implemented to a level of methodology determination. These methods and curriculum materials constituted a third (instructional) sub-system.

Thus, as originally proposed, a system capability has been developed in fulfillment of expressed needs. The system, however, remains untested and unevaluated. ADO 43-03X called for feasibility test and cost-effectiveness determination. The project was designed to so comply. Test and evaluation through the process of implementation has not proved feasible in the Navy Medical Department within the duration of the project. As designed and developed the system does have "... precise goals and defined operational interrelation among instructional system components." The latter has been achieved in terms of a recommended career structure affording productive, rewarding manpower utilization which bridges manpower training and health care delivery functions.

Data Management Sub-System

Job analysis, involving the application of comprehensive task inventories to thousands of job incumbents, generates many millions of discrete bits of response data. They can be processed and manipulated only by high speed computer capability using rigorously designed specialty programs. In addition to numerical data base handling, there is the problem of rapidly and accurately manipulating a task statement data base exceeding ten thousand carefully phrased behavioral statements. Through the use of special programs, task inventories are prepared, printouts for special purposes are created following a job analysis application, access and retrieval of both data and tasks are efficiently and accurately carried out, and special data analyses conducted. The collective programs, techniques and procedures comprising this sub-system are referred to as the Navy Occupational Data Analysis Language (NODAL).

Job Analysis Sub-System

Some twenty task inventory booklets (and associated) response booklets) were the instruments used to obtain job incumbent response data for more than fifty occupations. An inventory booklet contains instructions, formatted questions concerning respondent information ("bio-data"), response dimension definitions, and a list of tasks which may vary in number from a few hundred to more than a thousand per occupational field.

By applying NODAL and its associated indexing techniques, it is possible to assemble modified or completely different inventories than those used in this research. Present inventories were applied about three years ago. While they have been rendered in operational format, they should not be reapplied until their task content is updated.

Response booklets were designed in OPSCAN mode for ease of recording and processing responses.

Overall job analysis objectives and a plan of administration were established prior to inventory preparation, including the setting of provisional sample target sizes. Since overall data attrition was forecast to approximate twenty percent, final sample and sub-sample sizes were adjusted accordingly. Stratified random sampling techniques were used. Variables selected (such as rating, NEC, environment) determined stratifications, together with sub-population sizes. About fifteen percent of large sub-populations were sought while a majority of all members of small sub-populations were sought.

Administration procedures were established with great care for every step of the data collecting process, and were coordinated with sampling and data analysis plans. Once set, the procedures were formalized as a protocol and followed rigorously.

Instructional Sub-System

Partial "competency curricula" have been composed as an integral sub-system bridging what is required as performance on the job with what is, accordingly, necessary instruction in the training process. Further, curriculum materials were developed to meet essential requirements for implementing the system so that the system could be tested and evaluated for cost effectiveness. However, due to the fact that test and evaluation was not feasible in the Navy Medical Department within the duration of the project, it was not possible to complete the development of the system through the test and evaluation phase. The inability to complete this phase also interrupted the planned process for fully developing the curricula; therefore, instead of completed curricula ready for use in the system, the curricula were partially developed to establish the necessary sub-system methodology. competency curricula are based on tasks currently performed by job incumbents in 1971. (The currency of a given curriculum depends upon periodic analysis of incumbents' jobs, and its quality control resides in the evaluation of the performance competency of the program's graduates.)

A competency curriculum provides a planned course of instruction or training program made up of sequenced competency units which are, in turn, comprised of sequenced modules. These modules, emphasizing performance objectives, are the foundation of the curriculum.

A complete module would be comprised of seven parts: a cluster of related tasks; a performance objective; a list of knowledges and skills implied by the objective; a list of instructional strategies for presenting the knowledges and skills to the learner; an inventory of training aids for supporting the instructional strategies; a list of examination modes; and a statement of the required training time. In this project, curriculum materials have been developed to various levels of adequacy, and usually comprise only the first three parts; the latter four need to be prepared by the user.

The performance objective, which is the most crucial part of the module, is the basis for determining curriculum content. It is composed of five essential elements: the stimulus which initiates the behavior; the behavior; the conditions under which the behavior takes place; the criteria for evaluating the behavior; and the consequence or results of the behavior. A sixth element, namely next action, is not essential; however, it is intended to provide linkage for the next behavior.

Knowledges and skills listed in the module are those needed by the learner for meeting the requirements of the performance objective.

Instructional strategies, training aids, examination modes and training time have been specified only for the Basic Hospital Corps Curriculum. The strategies, aids and modes were selected on the basis of those considered to be most supportive in presenting the knowledges and skills so as to provide optimum learning effectiveness and training efficiency. The strategies extend from the classroom lecture as traditionally presented by a teacher to the more sophisticated mediated program for self-instruction. The training aids, like strategies, extend from the traditional references and handout material in the form of a student syllabus to mediated programs for selfinstruction supported by anatomical models. Examination modes extend from the traditional paper and pencil tests to proficiency evaluation of program graduates on the job, commonly known as feedback. Peedback is essential for determining learning effectiveness and for quality control of a training program. The kind of instructional strategies, training aids and examination modes utilized for training are limited only by such factors as staff capability and training budget.

The training time specified in the Basic Hospital Corps Curriculum is estimated, based upon essential knowledge and skills and program sequence.

The competency curriculum module, when complete, provides all of the requirements for training a learner to perform the tasks set forth in the module. A module may be used independently or related modules may be re-sequenced into modified competency units to provide training for a specific job segment.

Since the curricula are based upon tasks performed by job incumbents in 1971, current analysis of jobs needs to be accomplished using task inventories that have been updated to reflect changes in performed tasks. Subsequent to job analysis, a revision of the curricula should be accomplished to reflect task changes. When the foregoing are accomplished, then faculty and other staff members may be indoctrinated to the competency curricula and to their relationship to the education and training system.

In addition to the primary use for the systematic training of job incumbents, these curricula may be used to plan for new training programs, develop new curricula, and revise existing curricula; develop or modify performance standards; develop or modify proficiency examinations; define billets; credentialize training programs; counsel on careers; select students; and identify and select faculty.

The System

Three sub-systems, as described, comprise the proposed system for Education and Training Programs in the Navy Medical Department. This exploratory and advanced developmental research has established an overall methodology for improved education and training incorporating every possible means of providing bases for demonstrating feasibility and cost effectiveness. There remains only job analysis sub-system up-dating, instructional sub-system completion, and full system test and evaluation.

Acknowledgements

The authors wish to acknowledge the invaluable participation of the several thousands of Naval personnel who served as respondents in inventory application. The many military and civilian personnel who contributed to developmental efforts are cited by name in the Final Report.

The authors also wish to acknowledge former colleagues for singularly important contributions, namely, Elias H. Porter, Ph.D., Carole K. Kauffman, R.N., M.P.H., Mary Kay Munday, B.S.N., R.N., Gail Zarren, M.S.W., and Renee Schick, B.A.

Identity and acknowledgement of the project Advisory Group during the project's final year is recorded in the Final Report.

Lastly, the project could not have been commenced nor carried out without the vision, guidance and outstanding direction of Ouida C. Upchurch, Capt., NC, USN, Project Manager.

NAVY MEDICAL DEPARTMENT

TASK INVENTORY BOOKLET

EQUIPMENT REPAIR (HOSPITAL CORPS)

CONSTRAINTS AND ETHICAL USE

This task inventory was developed three years ago in a first-version key punch format for education and training research purposes.

The present "operational" format, using a mark-sense response booklet (Opscan), is recommended for future applications. The task and equipment statements comprising the bulk of the inventory are precisely the same (less duplicate entries) as in the original research tools but rearranged for Opscan mode. Biographical data questions have also been reformatted for Opscan (NEC codes should be updated).

The processing, administering and formatting of this inventory have thus been readied for operational application.

It is strongly recommended that this inventory be updated in its task and equipment statement sections before actual operational use. These reasons pertain:

- Changes in medical or related procedures or techniques
- Some tasks may violate current policy or be obsolete
- Equipment changes may have occurred
- The objective of task comprehensiveness may change
- •Objectives may shift to embrace manpower utilization as well as education and training

In the latter regard, the present operational format includes a "time to perform" dimension (as well as frequency of performance and two additional optional blank response dimension fields). As a response dimension, "time to perform" has been validated within the context of inventories for professional personnel where the objectives embraced utilization (i.e., time associated with shared and delegable tasks). The original Enlisted inventory content was directed to education and training factors only. If "time to perform" is to be used operationally, each task and equipment statement should be examined by expert job incumbents to remove possible overlaps which could confound "time to perform" data. This review process would also serve other purposes cited above.

A general precaution is in order.

When task analysis inventories are poorly prepared, loosely administered, administered according to less than rigorous sampling, or are handled casually in processing or interpretation, they will inevitably produce poor or questionable data, at best. At worst, such practices will result in loss of money and time, and produce dangerous data. Inventories should be prepared, applied, processed and interpreted only by knowledgeable professional and technical personnel. As in the cases of ethically controlled behavior tests, inventories should not be casually copied or distributed, and should remain under the control of authorized, trained personnel. Factors effecting reliability and validity should be fully appreciated.

GENERAL INSTRUCTIONS

There are two parts to be completed for this survey:

Part I	Career Background Information
	(answers to be recorded in this
•	TASK BOOKLET)

Part II A	(answers to be recorded on the
	accompanying (RESPONSE BOOKLET)
	List of Tasks

- II B List of Instruments and Equipment Repaired
- II C List of Instruments and Equipment Used

Each part is preceded by a set of instructions. Be sure to read them carefully before you start answering each part. All instructions are found on the tinted pages.

PLEASE USE ONLY NUMBER 2 LEAD PENCILS. ERASE ALL CHANGES CAREFULLY AND COMPLETELY. DO NOT PUT ANY MARKS OTHER THAN YOUR ANSWERS ON EACH RESPONSE PAGE.

DO NOT FOLD, WRINKLE, CREASE OR DETACH PAGES FROM EITHER TASK BOOKLET OR RESPONSE BOOKLET.

WHEN RECORDING YOUR ANSWERS YOU MAY WANT TO USE A RULER TO READ ACROSS ANSWER AND QUESTION COLUMNS.

WHEN YOU HAVE COMPLETED YOUR RESPONSES, PUT THE TASK INVENTORY BOOKLET AND THE RESPONSE BOOKLET IN THE ENCLOSED SELF-ADDRESSED ENVELOPE. SEAL AND RETURN TO THE OFFICER WHO GAVE YOU THIS PACKAGE. COMPLETED BOOKLETS SHOULD BE RETURNED WITHIN ONE WEEK OF RECEIPT.

		DO NOT	FILL IN	l .
	Part I			(1)
	CAREER BACKGROUND INFORMATION	N		(7)
	k that the Form and Serial Number in this		Serial No.	(, ,
DOX	match those on the cover of this Booklet Please fill out completely	4	!	
Name	of your Duty Station			
	& State (if applicable)			
				
50C1	al Security Number	. — —		(14)
		<u></u>		
	SE ANSWER QUESTIONS BELOW BY ENTERING THE PREER IN THE BLANKS PROVIDED. TWO BLANKS REQUI		ENTER ANSWERS	
TWO-	DIGIT ANSWER. DISREGARD NUMBERS IN PARENTHE	SIS.	HERE	
		,		
Q1.	Select the number to indicate the Corps to which you belong:		Q1	(23)
	 Dental Technician Hospital Corps 			
Q2.	Indicate your military status:		Q2	(24)
	1. USN			
	2. USNR			
Q3.	Indicate your pay grade:		Q3	(25)
	1. E1 6. E6 2. E2 7. E7			
	3. E3 8. E8			
	4. E4 9. E9 5. E5			
Q4.	Indicate your total years of active duty in the Navy to date: (estimate to the nearest		Q4	(26)
	1. Less than 2 years			
	 2 to 4 years 5 to 8 years 		!	
	4. More than 8 years		5	1

		ENTER ANSWERS HERE	·
Q5.	Select the number to indicate your present immediate supervisor:	Q5	(27)
	 Physician Dentist Nurse MSC Officer HM or DT Other (Specify) 		
Q6.	Select the number to indicate the average number of hours you work per week: (estimate to the nearest hour) 1. 35 to 40 hours	Q6	(28)
	2. 41 to 50 hours 3. More than 50 hours	:	
Q7.	Please give an estimate of the percent of time you spend on the following (write five percent as 05):	Q7.	
	1. Inpatient care	1%	(29)
	2. Outpatient care	2	(31)
	3. Teaching	3.———% 4.———%	(33) (35)
	4. Administration 5. Other (specify)	5. — —%	(37)
	J. Ocher (Spectry)]	(3.)
Q8.	Assuming that most or all of the following	Q8	(39)
	factors are of importance to you, select the]	(41)
	three which, if improved, would contribute most to your job satisfaction:		(41)
	most to your jub satisfaction.		(43)
	Ol Salary and/or promotion opportunities]	}
	02 Retirement benefits		1
	03 Housing		Ī
	04 Educational advancement opportunities 05 Stability of tour of duty	1	1
	06 Physical facilities and equipment		1
	07 Administrative and clerical support		l
	08 Work load	1	!
	09 Personal career planning	1	•
	10 Opportunity to attend professional meetings		

		ENTER ANSWERS HERE	
Q9.	Using the list on page <u>vii</u> specify your current NEC by writing the <u>last two digits</u> of the CODE.	Q9	(4
Q10.	Select the number to indicate your years of experience corresponding to the NEC stated in Q9: (estimate to the nearest year)	Q10	(47
	1. Less than 1 year 4. 6 to 10 years 2. 1 to 2 years 5. 11 to 15 years 3. 3 to 5 years 6. More than 15 years	,	
Q11.	If you have other NEC(s) in addition to the one specified in Q9, check page vii and indicate the last two digits of the CODE(s). If you have none, enter "99" in answer space for Q11 and Q12.	Q11a b	(48 (50
Q12.	Select the number to indicate the years of experience you had in the NEC(s) stated in Qll (estimate to the nearest year).	Q12a	(52 ₎ (53 ₎
	1. Less than 1 year 4. 6 to 10 years 2. 1 to 2 years 5. 11 to 15 years 3. 3 to 5 years 6. More than 15 years		
Q13.	From the list below, write the two-digit CODE to indicate the specialty of the department in which you are currently functioning.	Q13	(54)
	CODE Ol Administration Ol Education Ol Education Ol Coronary Care Ol Dermatology Ol Medicine - OPD Ol Medicine - Wards Ol Obstetrics/Gynecology Ol Orthopedics Ol Orthopedics Ol Orthopedics Ol Orthopedics Pediatrics Psychiatry Public Health Radiology General Surgery-Wards		

ν

		ENTER ANSWER HERE	•
Q14.	Select the number to indicate the type of duty station at which you currently work, and have been working for at least 30 days:	Q14	(56)
	 Hospital Dispensary Aboard ship/sub, no M.O. (or D.O.) aboard Aboard ship/sub, M.O. (or D.O.) aboard Aviation squadron/wing, Navy or Marine Marine ground forces Administrative Commands Research Commands or PMUs Dental Clinic Other 		
Q15.	Indicate the number of people you normally supervise:	Q15	(57)
	0. None 3. 6-10 1. 1-2 4. 11-20 2. 3-5 5. over 20		

MEDICAL/DENTAL NEC (NAVAL ENLISTED CODE) AND TITLE

0000 General Service, Hospital or Dental Corpsman 3371 Health Physics & Process Control Technician 3391 Nuclear Power Plant Operator 8402 Nuclear Submarine Medicine Technician 8403 Submarine Medicine Technician 8404 Medical Field Service Technician 8405 Advanced Hospital Corps Technician (Class B) 8406 Aviation Medicine Technician 8407 Nuclear Medicine Technician 8408 Cardiopulmonary Technician 8409 Aviation Physiology Technician 8412 Clinical Laboratory Assistant Technician 8413 Tissue Culture Technician 8414 Clinical Chemistry Technician 8415 Medical Technology Technician 8416 Radioactive Isotope Technician 8417 Clinical Laboratory Technician 8432 Preventive Medicine Technician 8433 Tissue Culture and Tissue Bank Technician 8442 Medical Administrative Technician 8452 X-ray Technician 8453 Electrocardiograph/Basal Metabolism Technician 8454 Electroencephalograph Technician 8462 Optician (General) Technician 8463 Optician Technician 8466 Physical and Occupational Technician 8472 Medical Photography Technician 8482 Pharmacy Technician 8483 Operating Room Technician 8484 Eye, Ear, Nose, & Throat Technician 8485 Neuropsychiatry Technician 8486 Urological Technician 8487 Occupational Therapy Technician 8488 Orthopedic Appliance Mechanic 8489 Orthopedic Cast Room Technician 8492 Special Operations Technician 8493 Medical Deep Sea Diving Technician 8494 Physical Therapy Technician 8495 Dermatology Technician 8496 Embalming Technician 8497 Medical Illustration Technician 8498 Medical Equipment Repair Technician 8703 DT General, Advanced 8707 DT Field Service 8713 DT Clinical Laboratory 8714 DT Research Assistant 8722 DT Administrative 8732 Dr Repair 8752 DT Prosthetic, Rasic 8753 DT Prosthetic, Advanced

8765 DT Maxillofacial Prosthetic

RESPONSE BOOKLET INSTRUCTIONS

- To complete Part II, you need this TASK BOOKLET and the accompanying RESPONSE BOOKLET. Record all your answers to Part II in the RESPONSE BOOKLET.
- All pages of the RESPONSE BOOKLET are machine readable. In order for responses to be properly read, please be sure to:
 - 1. Use a No. 2 pencil only
 - 2. Carefully and completely shade the number corresponding to your answer under each column.
- Complete Page 00 of the RESPONSE BOOKLET first. Follow instructions given on the page. Fill in Line 1, and Boxes 2, 3, 4, and 5. Ignore all other boxes. BE SURE TO ENTER YOUR SOCIAL SECURITY NUMBER (WRITE DOWNWARD) IN THE BLANK SPACES IN BOX 3: then darkly shade the corresponding number on each line. An example of a completed Page 00 is shown on the next page (the handwritten notes in this example are for clarification only. Please do not make similar notes on your RESPONSE BOOKLET.)
- After completing Page 00, carefully read and follow instructions given on pages x through xiv.
- PLEASE HANDLE YOUR RESPONSE BOOKLET CAREFULLY. KEEP IT CLEAN AND AWAY FROM CHEMICALS. DO NOT DETACH, FOLD, WRINKLE OR CROSS OUT ANY PAGE.

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SEE COVER OF YOUR TASK BOOKLET FORM NãO. Ser. No. 0233 my Birthday in May 10, 1940 May = 05 1940 = 40 ORM SK 2 8 8 NTH 3 3 5 5 9 6 8 80 SERIAL OKLET 3 3 3 5 5 5 ê 1 2 3 3 1 3 3 5 3 5 Ó N O. i. 1 2 3 1 YEAR

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PART II

PART II A LIST OF TASKS

PART II B LIST OF INSTRUMENTS AND EQUIPMENT REPAIRED

PART II C LIST OF INSTRUMENTS AND EQUIPMENT USED

HOW TO RESPOND TO TASK STATEMENTS AND INSTRUMENTS

Your responses to each statement should be marked on the corresponding page, column and item number in your RESPONSE BOOKLET.

Note that each page in your RESPONSE BOOKLET has two response blocks. The left-hand block (items 1-25) is for entering responses to statements printed on LEFT pages of this TASK BOOKLET; the right-hand block (items 26-50) is for the responses to statements printed on RIGHT pages. Make sure that your answers are recorded in the appropriate block on every page. DO NOT MAKE ANY MARKS OTHER THAN YOUR ANSWERS!

Each time you start a new page in your RESPONSE BOOKLET, check the page on your TASK BOOKLET. See that the numbers match; then mark the page number in "Box X" in the response page (see instructions at the top of response page.) This is necessary for computer processing.

Tear the Response Guide (p. xiii) at the perforation, and use the correct side to respond to each task or instrument found on the following white pages. Note the following detailed explanation of responses.

Column A - (the responses to Column A differ for Part II A, B and C. Be sure to use the appropriate set of responses.)

Part II A

How often did you do this task within the last month? (If you were on leave, consider your immediate past working month.)

- 0 = Did not do
- 1 = Did less than 5 times
- 2 = Did 5 to 20 times
- 3 Did 21 to 50 times
- 4 = Did 51 to 100 times
- 5 = Did more than 100 times

Part II B

How often did you repair this instrument or equipment within the last month? (If you were on leave, consider your immediate past working month.)

- 0 = Did not repair
- 1 = Repaired <u>less than 5</u> times
- 2 = Repaired 5 to 20 times
- 3 = Repaired 21 to 50 times
- 4 = Repaired 51 to 100 times
- 5 Repaired more than 100 times

Part II C

How often did you use this instrument or piece of equipment within the last month? (If you were ... leave, consider your immediate past working month.)

- 0 = Did not use
- 1 = Used <u>less than 5</u> times
- 2 = Used 5 to 20 times

- 3 = Used 21 to 50 times
- 4 = Used 51 to 100 times
- 5 = Used more than 100 times

If answer in Column A is 0, go to the next statement. If answer is 1, 2, 3, 4 or 5, answer also Columns B, C & D.

Column B

Indicate the approximate time you spent on a <u>single</u> performance the last time you performed this task.

- 0 = less than one minute
- 1 = 1 to 4 minutes
- 2 = 5 to 10 minuees
- 3 = 11 to 20 minutes
- 4 = 21 to 30 minutes
- 5 = 31 to 60 minutes
- 6 = 1 to 2 hours
- 7 = more than 2 hours

Column C

Do you feel you need additional training to perform this task?

- 0 = No
- 1 = Yes

RESPONSE GUIDE

(DO NOT LOSE THIS TAB)

AND IIB HOW TO RESPOND TO PART IIA - LIST OF TASKS, AN LIST OF INSTRUMENTS AND EQUIPMENT REPAIRED

C & D ALSO. IF A = 1-5, ANSWER COLUMNS B, IF A = 0, GO TO NEXT STATEMENT: ANSWER COL. A FIRST.

(Additional instructions will be given if this column is used) OPTION TRAINING TO PER-NEED ADDITIONAL DO YOU FEEL YOU FORM THIS TASK? 1=YES 0**=**0 0= LESS THAN 1 MINUTE (single performance /=MORE THAN 2 HOURS -11 TO 20 MINUTES 4=21 TO 30 MINUTES 5=31 TO 60 MINUTES 2=5 TO 10 MINUTES TIME CONSUMED L=1 TO 4 MINUTES the last time 6=1 TO 2 HOURS performed) 100 TIMES NOT DO LAST MONTH LESS THAN 5 TIMES TO 100 TIMES TO SO TIMES TO 20 TIMES FREQUENCY * 2=DID 0=DID 1-DID 3-DID dIQ-5 xiii

* Use the scale as is for Part IIA; for Part IIB, substitute the word 'Repair' for 'Do'.

RESPONSE GUIDE

(DO NOT LOSE THIS TAB)

HOW TO RESPOND TO PART IIC - LIST OF INSTRUMENTS AND EQUIPMENT USED

IF A = 1-5, ANSWER COLUMNS B, C & D ALSO. IF A = 0, GO TO NEXT STATEMENT: ANSWER COL. A FIRST.

Ç

FREQUENCY

(last time used) TIME CONSUMED

TRAINING TO PER-FORM THIS TASK? DO YOU FEEL YOU NEED ADDITIONAL

(Additional instructions will be given if this column is used OPTION

0=DID NOT USE LAST MONTH

51 TO 100 TIMES MORE THAN 100 TIMES 1=USED LESS THAN 5 TIMES 2=USED 5 TO 20 TIMES TO 50 TIMES 5=USED 3=USED 4=USED

0=LESS THAN 1 MINUTE 6=1 TO 2 HOURS 7=MORE THAN 2 HOURS 4=21 TO 30 MINUTES 5=31 TO 60 MINUTES 3=11 TO 20 MINUTES 2=5 TO 10 MINUTES 1=1 TO 4 MINUTES

1=YES 0=N0

xiv

Part II A
LIST OF TASKS

LEFT PAGE	OL EQUIPMENT REPAIR TASK BIOKLE)
	I ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE OL I CF RESPONSE BOOKLET
l	PERFORM WELDING/BRAZING OPERATION
2	I IZERO POINTER ON GAUGES/METERS
3	 BALANCE/INDEX WEIGHT MEASURING DEVICES
4	I ADJUST COUNTER WEIGHT SYSTEM ON MEDICAL EQUIPMENT
5	REPLACE BRUSHES ON AC MOTORS
6	I TTRUE SCORED/PITTED COMMUTATOR USING LATHE I
7	1 REPLACE "O" RINGS
8	I ICHECK INSULATING GAS LEVEL I
9	ICHECK INSULATING OIL LEVEL
10	I ISWEAT COPPER AND BRASS JOINTS I
11	I REPLACE PILOT LAMPS I
12	MEASURE REFRIGERANT LEVEL
13	I DETERMINE SOURCE OF LEAK IN HYDRAULIC SYSTEM I
14	BLEED HYDRAULIC SYSTEMS
15	ADJUST SPRING TENSION
16	 ADJUST REPLENISHING PUMPS
17	SET/ADJUST THERMOSTAT ACCORDING TO USER'S SPECIFICATIONS
18	RECONDITION IMPELLER VANES IN VACUUM SYSTEMS
19	PREPLACE GASKETS ON ANESTHESIA MACHINE
20	TIGHTEN HIGH PRESSURE GAS FITTINGS
21	! EXAMINE ANESTHESIA MACHINE FOR PROPER OUTPUT
22	CLEAN/ADJUST CONTACT POINTS
23	 SILVER-SOLOER SURGICAL INSTRUMENT
24	ICLEAR CLOGGED ATOMIZER
25	I ICLEAN/POLISH SURGICAL INSTRUMENT I

GO TO RIGHT HAND PAGE

D1 EQUIPMENT REPAIR TASK BOOKLET
ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE OF OF RESPONSE BOOKLET
SHARPEN/HONE SURGICAL INSTRUMENT
MAKE MODIFICATIONS ON SURGICAL INSTRUMENTS
CLEAN/POLISH NON-SURGICAL MEDICAL EQUIPMENT
DO TOUCH-UP PAINTING ON MEDICAL/DENTAL EQUIPMENT
ADJUST FRICTION LOCK ON MEDICAL EQUIPMENT
LUBRICATE MEDICAL/DENTAL EQUIPMENT
REMARK (ETCH) MEDICAL EQUIPMENT
CLEAN EXPOSED SURFACE OF LENS
REPAIR LOCKING ASSEMBLY ON MEDICINE CABINET
REPAIR HYDRAULIC SYSTEM ON DENTAL CHAIR
ADJUST COUNTERBALANCE SPRING ON DENTAL OPERATING LIGHT
ADJUST LIGHT PATTERN ON DENTAL OPERATING LIGHT
I ADJUST CUP-FILLER COMPONENTS ON DENTAL UNIT
ENSURE PROPER AIR/WATER DELIVERY TO DENTAL SYRINGE .
CORRECT MALFUNCTIONING RETRACTION MECHANISM ON DENTAL UNIT
ADJUST DRIP RATE ON AIR-DRIVEN DENTAL HANDPIECE
CLEAN VALVE ASSEMBLY ON DENTAL UNIT AIR FILTER
ADJUST PRESSURE DIFFERENTIAL ON AIR COMPRESSOR
REPLACE RINGS ON AIR COMPRESSOR
REPLACE NEEDLENOID VALVE ON DENTAL UNIT
CLEAN/REPLACE WATER FILTER ELEMENTS ON DENTAL UNIT
 CLEAR WATER LINES ON CONTRA-ANGLE AIR-DRIVEN DENTAL HANDPIECE
! REPLACE WORN GASKETS ON AIR-DRIVEN DENTAL HANDPIECE
I IADJUST END PLAY ON DENTAL HANDPIECE I
 CLEAN AND REASSEMBLE BELT-DRIVEN DENTAL HANDPIECE

LEFT PAGE	02 EQUIPMENT REPAIR TASK SCOKLET
TASK NO.	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 02
l	IADJUST AIR PRESSURE ON DENTAL HANDPIECE
5	IPATCH MUFFLE ON BURNOUT OVEN
3	I ADJUST TIMING MECHANISM ON STERILIZER
4	REPAIR SPECTACLE FRAMES
5	ASSEMBLE PARTS TO MANUAL TICCNIUM CASTING MACHINE
6	
7	PREPLACE BRAKE SHOES ON ELECTROMAGNETIC LOCK
8	 TREPLACE PILOT LAMPS
9	1 DO TAPPING AND THREADING OF METAL PARTS
10	! !PERFORM WELDING/BRAZING OPERATION
11	
12	TEST TRANSISTOR USING OHMETER
13	TEST TRANSISTOR FOR CONDUCTIVITY USING TRANSISTOR CHECKER
14	MEASURE CAPACITOR VALUE
15	1 CHECK CHOKE FOR SHORT/OPEN WITH VDM/VTVM
16	I ICHECK CAPACITOR FOR SHORT/OPEN WITH VOM/VTVM
17	 CHECK RECTIFIER/DIODE USING TUBE TESTER
18	 CHECK RECTIFIER/DIODE USING OSCILLOSCOPE
19	 CHECK RECTIFIER/DIODE USING OHMETER
20	 CHECK RESISTOR FOR SHORT/OPEN/VALUE
21	TOHECK PC BOARD FOR COLD SOLDER JOINT
22	CHECK PC BOARD FOR CRACKS
23	CHECK TUBE USING TUBE TESTER
24	INSTALL PAGE/MUSIC SYSTEM
25	INSTALL TWO-WAY RADIO IN AMBULANCE
i	

RIGHT PAGE (D2 EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN PIGHT SIDE OF PAGE 02 OF RESPONSE BOOKLET
26	CLEAN AND COAT HIGH VOLTAGE CABLE CONNECTIONS
27	CHECK HIGH VOLTAGE CABLE WELLS FOR CRACKS/ARCING
28	CLEAN/ADJUST CONTACT POINTS
29	MEASURE AC/DC CURRENT
30	MEASURE POWER SUPPLY OUTPUT
31	NEASURE DC OUTPUT ON POWER SUPPLY USING VOLTMETER
32	 CHECK HEATING ELEMENTS WITH OHMETER
33	 REPLACE MALFUNCTIONING SWITCH
34	 CHECK SWITCH USING VOLTMETER
35	 REESTABLISH WIRING CONTINUITY BY SPLICING AND SOLDERING
36	 REESTABLISH WIRING CONTINUITY BY SPLICING
37	 REPLACE INTERCONNECTING WIRING
38	MAKE CONTINUITY CHECK OF TRANSFORMER WINDINGS
39	 DETERMINE CONDITION OF ELECTRICAL PART BY VISUAL EXAMINATION
40	 REPLACE CARTRIDGES ON AIR-DRIVEN DENTAL HANDPIECE
· ·	DETERMINE AND SET KILOVOLTAGE-MAJOR/MINOR-PEAK METER ON X-RAY UNIT
42	DETERMINE AND SET MA METER ON X-RAY UNIT
43	DETERMINE AND SET IMPULSE TIMER ON X-RAY UNIT
44	SELECT ALTERNATIVE TECHNIQUES IN SETTING X-RAY UNIT
45	READ X-RAY FILMS FOR TECHNICAL ADEQUACY
46	 ADJUST COLLIMATOR LIGHT FIELD ON X-RAY UNIT
47	 INSPECT X-RAY FILM QUALITY TO EVALUATE DEVELOPMENT TECHNIQUES
48	 DEVELOP MEDICAL X-RAY FILMS
49	 DD PHOTODOSIMETRIC CHECK FILM PROCESS
50	 TEST CASSETTES FOR SCREEN FILM CONTACT

TURN PAGE

LEFT PAGE	03 FQUIPMENT REPAIR TASK BOOKLET
	I ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 03 I OF RESPONSE BOOKLET
1	TYEST CASSETTES FOR SCREEN LAG
2	ICHECK X-RAY DARK ROOM FOR LIGHT LEAKS
3	 RETRIEVE SILVER FROM X-RAYS
4	I ICHECK DARK ROOM SAFE LIGHTS I
5	ICHECK X-RAY TUBE FOR GAS PRESENCE
6	 REPLACE HIGH VOLTAGE CABLES ON X-RAY EQUIPMENT
7	CHECK/ADJUST X-RAY UNIT TIMER USING SPINTOP TECHNIQUE
	 PERFORM SAFETY INSPECTIONS OF AREAS WHERE RADIATION PRODUCING EQUIPMENT IS USED
9	! !ENFORCE ACCIDENT PREVENTION MEASURES
10	I ICHECK COMPRESSED GAS TANKS FOR LEAK, E.G. OXYGEN I
11	 PERFORM ROUTINE SAFETY INSPECTIONS
12	 PROVIDE ADVICE ON SAFETY EQUIPMENT IMPROVEMENTS
13	1 100 PERIODIC MECHANICAL SAFETY CHECKS ON POWER OPERATED EQUIPMENT 1
	I ICHECK LEVEL OF STATIC ELECTRICITY (CONDUCTIVITY) OF O.R. IEQUIPMENT
15	ICHECK EQUIPMENT FOR ELECTRICAL HAZARDS AND GROUNDS
16	 SUPERVISE ROUTINE EQUIPMENT MAINTENANCE FOR SECTION/UNIT
17	 DISINFECT INSTRUMENTS/MATERIALS/EQUIPMENT
18	I ICHECK PRESSURIZED TANKS FOR QUANTITY OF GAS, E.G. DXYGEN, HELIUM
19	I SENSURE THAT SAFE INDUSTRIAL PRACTICES ARE ADHERED TO, E.G. USE OF PROTECTIVE EYE GLASSES
20	PERFORM PREVENTIVE MAINTENANCE
21	I TRUN TEST STANDARD TO CHECK ACCURACY OF EQUIPMENT
22	I IPLAN THE PHYSICAL LAYOUT OF A DENTAL CLINIC I
23	CONSTRUCT EMERGENCY FIELD EVACUATION DEVICES
24	CONSTRUCT DENTAL FURNISHINGS BENCHES TABLES
25	 FABRICATE HIGH/LOW PRESSURE GAS LINES
	1

GO TO RIGHT HAND PAGE

TURN PAGE

LEFT PAGE	04 EQUIPMENT REPAIR TASK BOOKLET
	1 ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 04 1 OF RESPONSE BOOKLET
	REFER ONWARD TO THE PROPER PERSONNEL QUERTES FROM CIVILIAN LASSOCIATIONS/INDIVIDUALS
2	ESTABLISH GUIDELINES FOR USER TEST, E.G. NEW EQUIPMENT
	I DETERMINE NEED FOR EQUIPMENT EVALUATION, I.E. USER TEST, IPPOFESSIONAL REVIEW
4	I IDRAFT OFFICIAL CORRESPONDENCE I
5	 BRIEF THE COMMANDING OFFICER
6	{ PERFORM SKETCHES/DRAWINGS FOR ASSIGNED PROJECTS
7	 IDETERMINE SUPPLIES AND EQUIPMENT BUDGET
8	 Prepare one-time or infrequent reports for requestors
9	I DO SUPPLY/EQUIPMENT INVENTORY
10	1 ILOAD AND UNLOAD EQUIPMENT 1
11	I IMAINTAIN INVENTORY/STOCK OF EQUIPMENT/FURNITURE I
	! IENSURE DENTAL FIELD KITS ARE SUITABLE FOR ISSUE, E.G. CHECK ICONTENTS, TAG, WATERPROOF
13	I IRETURN EQUIPMENT TO CIVILIAN CONTRACTORS FOR REPLATING/REPAIR [
14	 ISSUE SUPPLIES/INSTRUMENTS/EQUIPMENT/MATERIALS
15	 DISPOSE OF SUPPLIES/INSTRUMENTS/EQUIPMENT AFTER TIME LIMIT/ EXPIRATION DATE
16	COMPOSE INITIAL PROJECTIONS FOR EQUIPMENT NEEDS
17	APPROVE REQUISITIONS
18	INEGOTIATE WITH VENDORS, E.G. COST, DELIVERY SCHEDULE
19	MAINTAIN PROPERTY CUSTODY CARDS FOR EQUIPMENT
20	I CONSULT ON CENTRAL/LOCAL SUPPLY PROBLEMS/PROCEDURES
21	I IREVIEW REQUISITIONS
22	
23	I PREDISTRIBUTE EXCESS EQUIPMENT ACROSS COMMANDS
24	
25	I MAINTAIN NAVY SILVER RECOVERY PROGRAM

GO TO RIGHT HAND PAGE

IGHT PAGE	04 EQUIPMENT REPAIR TASK BOOKLET
TASK NO.	1 ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 04 1 OF RESPONSE BOOKLET
26	MAINTAIN LEDGER OF SUPPLY/STOCK, E.G., REQUISITIONS, COST JACCOUNTING
27	PREPARE INVENTORY REPORTS
28	PREPARE EQUIPMENT FOR CARGO HANDLING PROCEDURES
29	COORDINATE LOADING AND UNLOADING OF EQUIPMENT
30	ASSIGN SPACE FOR EQUIPMENT AND SUPPLIES
31	 ASSIST IN COMMAND MATERIAL INSPECTIONS
32	PROJECT COSTS FOR EQUIPMENT NEEDS
33	I IMAKE RECOMMENDATIONS ON PURCHASE/REPLACEMENT OF EQUIPMENT/ ISUPPLIES
34	I IINSPECT CONDITION OF FILM STORAGE AREAS, I.E. FOR PROPER ITEMPERATURE/LIGHT/HUMIDITY
35	ATTACH IDENTIFYING TAG TO COMPONENTS/EQUIPMENT
36	INSPECT THAT SUPPLIES/MATERIALS/EQUIPMENT ARE STORED PROPERLY
37	I INSPECT SUPPLIES/EQUIPMENT FOR ACCEPTABILITY/DAMAGE/LOSS/ IPILFERAGE
38	
39	PACK AND STORE FIELD MEDICAL SUPPLIES AND EQUIPMENT
40	STORE SUPPLIES
41 .	I . IESTABLISH SUPPLY USAGE RATE
42	UNPACK EQUIPMENT
43	MAINTAIN STOCK OF EXCESS EQUIPMENT
44	 PERFORM DUTIES OF PUBLIC RELATIONS REPRESENTATIVE FOR IDEPARTMENT/UNIT
45	ARRANGE FOR REPLACEMENT/REPAIR OF EQUIPMENT AS REQUIRED
46	SURVEY SUPPLIERS REGARDING COST OF EQUIPMENT/SUPPLIES
47	PREPARE INVOICES/VOUCHERS FOR PAYMENT OF FUNDS
48	
49	PREPARE WORK GROERS/WORK REQUESTS
50	ORDER SUPPLIES/EQUIPMENT THROUGH FEDERAL SUPPLY SYSTEM
	T

TURN PAGE

LEFT PAGE	05 EQUIPMENT REPAIR TASK BCOKLET
1	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 05 OF RESPONSE BOOKLET
1	COMPILE STATISTICS NECESSARY TO MAKE REPORTS
2	 RECEIVE AND PROCESS MATERIAL COMPLAINTS
3	LOG RUNNING EXPENSES/EXPENDITURE OF MONIES
	MAINTAIN MODIFICATION RECORDS, E.G., EQUIPMENT, MEDICAL . ALLOWANCE
5	MAKE LOCAL (OPEN) PURCHASE OF SUPPLIES
6	 COMPILE LIST OF APPROVED LOCAL PURCHASE ITEMS
7	SURVEY EQUIPMENT TO DETERMINE CONTINUED SERVICEABILITY/USABILITY
8	 PICK UP/DELIVER EQUIPMENT
9	MAINTAIN FILE ON EQUIPMENT LOCATION/AVAILABILITY
10	! PREPARE SURVEY REQUEST FORM NAVSANDA-154
	 PREPARE DENTAL SERVICE REPORT EQUIPMENT AND FACILITIES SUPPLEMENT DD477-1
12	 LDG LDCAL PURCHASE INFORMATION
13	 LOG PLANT PROPERTY IDENTIFICATION NUMBER AND CONDITION
14	LOG CONTRACTOR REQUIREMENTS .
	 VERIFY/SIGN OFF ON REQUISITIONS/RECEIPTS FOR SUPPLIES/EQUIPMENT/ MATERIAL
16	I CHECK/LOCATE/IDENTIFY PART NUMBERS FROM CATALOGUES/MANUALS
17	 AMEND CROSS REFERENCE LIST OF INSTRUCTIONS/MATERIALS
18	 MAINTAIN A SUPPLY (EQUIPMENT, MATERIALS) INVENTORY SYSTEM
19	 PREPARE REQUISITIONS FOR SUPPLIES/EQUIPMENT
20	 SUGGEST TOPICS FOR CLASSES/CONFERENCES
	 REQUISITION TRAINING AIDS FROM OTHER HOSPITALS/CLINICS DR CIVILIAN/GOVERNMENT HEALTH FACILITIES
	ORIENT TRAINEES/STUDENTS TO PROGRAM, I.E. OBJECTIVES OF PROGRAM, ICLASS SCHEDULE
23	 SET UP/BREAK DOWN CLASSROOM DEMONSTRATIONS/TEACHING AIDS
	 MAINTAIN RECORD OF TRAINEE'S EXPERIENCE IN OJT PROGRAM, E.G. COURSES , PRACTICAL EXPERIENCE
25	 POST/ENTER TRAINING INFORMATION INTO INDIVIDUAL RECORDS

GO TO RIGHT HAND PAGE

RIGHT PAGE	05 EQUIPMENT REPAIR TASK BOOKLET
I TASK NO.	I ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 05 I OF RESPONSE BOOKLET
26	PREPARE CLASS RECORDS
27	ASSIGN GRADES FOR INDIVIDUAL PERFURMANCE
28	CONDUCT SPECIAL PREP-SESSION FOR ADVANCEMENT EXAMS
29	DESIGN TRAINING AIDS, ILLUSTRATIONS, GRAPHICS
30	EVALUATE STUDENTS PERFORMANCE/PROGRESS
31	REVISE TEST ITEMS ON BASIS OF ITEM ANALYSIS
32	ADMINISTER EXAMINATIONS
33	DECIDE WHEN TRAINEE IS CAPABLE OF PERFORMING A PROCEDURE WITHOUT DIRECT SUPERVISION
34	SELECT WORK EXPERIENCES FOR STUDENT/TRAINEE
35	SELECT CLINICAL MATERIAL FOR INSTRUCTIONAL PURPOSES, E.G. PATIENTS, CASE STUDIES
36	SELECT NEW MATERIALS/ADVANCED KNOWLEDGE FOR TEACHING PURPOSES
37	SCORE/CORRECT QUIZZES/EXAMINATIONS MANUALLY
38	SUGGEST IMPROVEMENTS FOR COURSE/CURRICULUM CONTENT
39	CHECK INDIVIDUAL'S PROGRESS DURING DJT
40	ARRANGE FOR USE OF LECTURE/TEACHING/DEMONSTRATION AIDS AND LEQUIPMENT
41	PREPARE STANDING OPERATING PROCEDURES, GUIDES AND INSTRUCTIONS FOR USE BY PERSONNEL
42	CHECK/CORRECT CALCULATIONS PERFORMED BY OTHER TECHNICIANS
43	INSTRUCT/DIRECT PERSONNEL IN MAINTAINING SECURITY STANDARDS
44	MAKE RECOMMENDATIONS ON/APPROVE/DISAPPROVE PERSONNEL REQUESTS TO ATTEND MEETINGS/CONFERENCES
45	GIVE DIRECT SUPERVISION TO CORPSMEN/TECHNICIANS
46	DETERMINE DUTIES FOR PERSONNEL
47	RECOMMEND PERSONNEL FOR EDUCATION/TRAINING
48	RECOMMEND PERSONNEL FOR PROMOTION/DEMOTION
49	PREPARE PAPERWORK FOR DISCIPLINARY ACTION FOR PERSONNEL AS REQUIRED
50	INTERVIEW/COUNSEL/ADVISE STAFF

LEFT PAGE	06 EQUIPMENT REPAIR TASK SOOKLET
	1 ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 06 1 OF RESPONSE BOOKLET
1	RECOMMEND LEAVE/TIME OFF FOR PERSONNEL
2	 PECOMMEND DISCIPLINARY ACTION FOR PERSONNEL AS REQUIRED
3	REVIEW SUGGESTIONS AND COMPLAINTS FROM PERSONNEL
4	 EVALUATE THE PERFORMANCE OF PERSONNEL
5	 ARRANGE TIME/DETAIL SCHEDULES
6	I IASSIGN PERSONNEL TO DUTIES/WORK ACCORDING TO SCHEDULE
	I IENSURE THAT ALL PERSONNEL MAINTAIN PROPER MILITARY BEARING, E.G. ICLEANLINESS, ATTIRE
8	
9	 CONDUCT BRIEFINGS
10	 REPLENISH TESTING ROOM WITH SUPPLIES
11	! MAINTAIN/ACCOUNT FOR SCRAP AMALGAM
12	 MAINTAIN/ACCOUNT FOR SCRAP GCLD/SILVER
13	† PICK UP/DELIVER EQUIPMENT
14	
15	 MAINTAIN UNIT/HARD/SECTION FIRST AID AND EMERGENCY EQUIPMENT
16	1 REQUEST/RECOMMEND ADDITIONAL PERSONNEL WHEN REQUIRED
17	1 IINSTITUTE CHANGES TO IMPROVE WORKING CONDITIONS 1
	I CONVERT COMMON WEIGHTS AND MEASURES FROM CHE SYSTEM TO ANOTHER, IE.G. CC TO TSP, LBS TO KG
19	 CONVERT CENTIGRADE TEMPERATURE TO FAHRENHEIT OR VICE VERSA
20	1 1PAINT WALLS, CEILINGS, FURNITURE OR EQUIPMENT 1
	I TUSE LOCALLY DEVELOPED MANUALS/GUIDES TO FOLLOW ANALYTICAL IPROCEDURES
22	I TUSE COMMERCIAL MANUALS TO FOLLOW ANALYTICAL PROCEDURES
23	I IUSE NAVY/DOD MANUALS TO STUDY ANALYTICAL PROCEDURES
	I TREAD EQUIPMENT MANUALS FOR OPERATION AND MAINTENANCE OF TEQUIPMENT
25	! IMAINTAIN A SET OF REFERENCE BOOKS/MANUALS/PUBLICATIONS

TASK NO. I ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE OF I OF RESPONSE BOOKLET

PERFORM ADMINISTRATIVE ERRANDS, E.G. PICK-UP PAYCHECKS, DELIVEP/

GO TO PART LIB

Part II B
LIST OF INSTRUMENTS AND EQUIPMENT REPAIRED

LEFT PAGE	08 EQUIPMENT REPAIR TASK BOOKLET
I TASK NO.	I ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE OB 1 OF RESPONSE BOOKLET
1	X-RAY CASSETTE CHANGER
2	ICAMERA, PHOTOFLUOROGRAPHIC
3	AUTOMATIC FILM CHANGER, E.G. SANCHEZ-PAREZ
4	PNEUMDENCEPHLOGRAM CHAIR
5	COOLER, X-RAY FILM PROCESSOR UNIT
6	TX-RAY, POLAROID UNIT
7	PROCESSING MACHINE, X-RAY FILM, AUTOMATIC
8	 PHOTOGRAPHIC FILM DRYER
9	
10	TAUTOMATIC INJECTOR, X-RAY CONTRAST MATERIAL
11	 X-RAY FILM VIEWER, STEREOSCOPE
12	IX-RAY, FILM IDENTIFICATION PRINTER
13	I THERMOLUMINESCENT DOSIMETER READER I
14	COBALT THERAPY MACHINES .
15	 ELECTRO-CONVULSIVE X-RAY EQUIPMENT
16	RADIAC METERS
17	RADIATION THERAPY EQUIPMENT
l 8	PORTABLE X-RAY UNIT
19	STATIONARY X-RAY UNIT
20	X-RAY, EQUIPMENT, FIELD
21	SCANNER, PAPER DOT RECORDER
22	LIGHT, OPERATING, FIELD
23	X-RAY TRANSFORMER
24	SLIDE/FILM STRIP/STILL PROJECTOR
25	HEADLIGHT BATTERY TYPE WITH HEAD BAND

RIGHT PAGE	08 EQUIPMENT REPAIR TASK BOOKLET
I TASK NO.	ENTER RESPONSES TO STATEMENTS RELOW IN FIGHT SIDE OF PAGE OR OF RESPONSE BOOKLET
26	ISLIT LAMP MICROSCOPE
27	TOPERATING MICROSCOPE, E.G. ZEISS, DIPLOSCOPE
28	1 ILIGHT, ULTRAVIOLET, PHYSICAL THERAPY
29	I IMAGE INTENSIFIER, FLUCROSCOPIC UNITS
30	T MAGNIFYING LAMP/HAND MAGNIFIER
31	ULTRAVIOLET LAMP, DERMATOLOGY (DIAGNOSTIC)
32	 SPECTROPHOTOFLUORIMETER
33	 TELUORIMETER
34	IULTRAVIOLET LAMP, DERMATOLOGY (TREATMENT) 1
35	I IINFRA RED LAMP
36	! !ULTRAVIOLET MICROSCOPE !
37	 SLIT LAMP FOR EYE TESTING
38	OPHTHALMOSCOPE
39	1 DEFIBRILLATOR COMPLETE WITH SCOPE SYNCHRONIZER
40	
41	CARDIAC SYNCHRONIZER SYSTEM
42	 ELECTROENCEPHALOGRAPH (EEG) APPARATUS
43	 ELECTROMYOGRAPH (EMG) RECORDER
44	STETHOSCOPE
45	 PACEMAKER EXTERNAL
46	PACEMAKER INTERNAL
47	HEART-LUNG MACHINE
48	 TAPE RECORDER: HEARTBEAT CAMBRIDGE CO
49	PHONOCARDIOGRAPH WITH COMPONENTS
50	STRIP CHART RECORDER
1	

LEFT PAGE	09 EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 09 OF RESPONSE BOOKLET
1	IELECTRONIC KIDNEY MONITOR
2	 CVP MONITOR (MODULE)
3	ELECTROCARDIOGRAPH (EKG) APPARATUS
4	ELECTRIC THERMOMETER, E.G. IVAC, K-PROBE
5	AUDIOMETER, MANUAL
6	EVACUATOR, ORAL CAVITY
7	EJECTOR FOR DENTURE FLASK
8	AMALGAMATOR, ELECTRIC, DENTAL
9	AMALGAM DISPENSING UNIT
10	PROCESSOR ACRYLIC PACO
11	ELECTROPLATER (SILVER, GOLD AND COPPER)
12	PANGREX X-RAY UNIT
13	CASTING MACHINE, CHROME COBALT
14	CASTING MACHINE, DENTAL METALS, AUTOMATIC
15	THERMOTROL CASTING MACHINE
16	UNIT, AIR ABRASIVE, DENTAL LABORATORY
17	TI-LECTRO POLISHER, (CHROME COBALT)
18	DENTAL POLISHER AND GRINDER COMPLETE WITH ATTACHMENTS
19	TRIMMER, DENTAL MODEL
20	ARTICULATOR
21	DENTAL CHAIR, FOOT OPERATED
22	ULTRASONIC PROPHYLAXIS UNIT
23	BATH, WATER, DENTAL IMPRESSION COMPOUND
24	LATHE, POLISHING, BALDOR
25	DENTAL BENCH PRESS

RIGHT PAGE 0	9 EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 09 OF RESPONSE BOOKLET
26	DENTAL FIELD ENGINE
27	DENTAL OPERATING UNIT, FIELD
28 J	BLOWPIPE, ACETYLENE
29 	HANDPIECE, DENTAL, AIR TURBINE
30	HANDPIECE, DENTAL, HIGH SPEED
31	HANDPIECE, DENTAL, LOW SPEED
32	HANDPIECE, DENTAL, STRAIGHT
33	HANDPIECE, DENTAL, ANGLE
34	HANDPIECE, DENTAL, PROPHYLAXIS
35 I	HANDPIECE, DENTAL, BELT DRIVEN
36 i	SPIROMETER
37	BASAL METABOLISM RATE MACHINE
38	BICYCLE MIXED BREATHING APPARATUS
39 [RESPIRATOR, BENNETT
40	RESPIRATOR, EMERSON
41	RESPIRATOR BIRD
42	RESPIRATOR, MONAGHAM PORTABLE
43	DXYGEN REGULATOR/FLOWMETER
44	FLOW METER
45	RESUSCITATOR, FIELD (CHEMICAL WARFARE)
46	SUCTION/VACUUM PUMP
47	GOMCO SUCTION MACHINE
48	ARMSTRONG INCUBATOR
49	I INFANT RESPIRATOR
50	I SOLETTE

LEFT	DAGE	3.0	EQUIPMENT	DEDATO	TACK	HONNET
LEFT	PAGE	10	EGUIPMENT	KEPAIK	IASK	DUUNLEI

LEFT PAGE	LO EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN LFFT SIDE OF PAGE 10 OF RESPONSE BOOKLET
1	SCTATION SCTATION
2	AMBU MACHINE
3	COMPRESSED AIR DEHYDRATOR
4	PHALEN SUCTION MACHINE
5	IPPB MACHINE (POSITIVE PRESSURE BREATHING APPARATUS)
6	ANESTHESIA MACHINE, FLOOR MODEL
7	ANESTHESIA MACHINE, PORTABLE
8	VAPORIZER
9	 PORTABLE IRON LUNG
10	 SPHYGMOMANOMETER (BLOOD PRESSURE APPARATUS)
11	JOBST COMPRESSION UNIT
12	SUCTION/VACUUM PUMP
13	! WATER BATH WITH THERMOSFAT !
14	FLAME PHOTOMETER
15	COAGULATION TIMER, PHOTOMETRIC DETECTION OF END POINT
16	LYOPHILIZER AND ASSOCIATED EQUIPMENT
17	AUTOCYTOMETER
18	AUTOMATED CELL COUNTER
19	I AUTOMATED HEMATOLOGY ANALYZER E.G. COULTER S
20	 SEQUENTIAL MULTIPLE ANALYZER 12 CHANNEL
21	AUTOMATIC SAMPLE CHANGER
22	IL BLOOD GAS ANALYZER
23	 CORNING BLOOD GAS ANALYZER
24	APPARATUS FOR BLOOD PH DETERMINATION
25	1 O2 PERCENT ANALYZER
	•

	EQUIPMENT REPAIR TASK BOOKLET TER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 10
•	TER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 10 RESPONSE BOOKLET
26 GAS	CHROMATOGRAPH
27 \SPE	ECTROPHOTOMETER, AUTO-RECORDING, E.G. DK-2
1	TO-ANALYZER, SINGLE OR DUAL CHANNEL
1	ITOMATIC PIPETTING MACHINE
- · · · · · · · · · · · · · · · · · · ·	JTOMATIC TISSUE PROCESSOR
1	ENTRIFUGE, REFRIGERATED
1	SECON REFRIGERATOR
-	FREEZER, PLASMA STORAGE
34	BLOOD PUMP
35	TRAVENAL ARTIFICIAL KIDNEY
30	HEMODIALYZER
37	PUMP, ALSOP FILTER
38	DISTILLING APPARATUS, WATER
39	LABORATORY BENCH, MOBILE, HOT/COLD WATER SYSTEM
40	BATH WHIRLPOOL LEG
41	HYDROTHERAPY TANKS
42	WATER BATH WITH THERMOSTAT
43	BOTTLE WASHER PARAFFIN BATH
44	GASTRIC COOLING MACHINE
45	AUTOCLAVE, DRY HEAT
46	AUTOCLAVE, GAS
48	AUTOCLAVE, STEAM
49	FIELD STERILIZER
	BED PAN STERILIZER

LEFT PAGE	LI EQJIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 11 OF RESPONSE BOOKLET
1	STEAM GENERATOR
2	IINSTRUMENT WASHER-STERILIZER
3	OVEN DRY HEAT
4	INCUBATORS LABORATORY
5	CABINET ELECTRIC SWEAT BATH
6	DRYING DVEN
7	DIATHERMY APPARATUS, MICROWAVE
8	DIATHERMY EQUIPMENT, OPHTHALMIC, E.G. MIRA
9	I Hypo-hyper-thermia machine
10	VIBRATOR, DENTAL MOLDING
11	 MECHANICAL MIXER, PHARMACEUTICAL
12	TUBE AGITATOR/MIXER/SHAKER
13	TISSUE GRINDER
14	CENTRIFUGE, LABORATORY (FLOOR MODEL)
15	ULTRASONIC CLEANER
16	DOSE CALIBRATOR
17	MULTIPLE INJECTION JET IMMUNIZATION GUN
18	AUTOMATIC PRE-PACKING MACHINE (TABLETS, CAPSULES)
19	AUTOMATIC LIQUID PRE-PACKER
20	AUTOMATIC I.V. INJECTOR, E.G. HARVARD
21	MICRO HEMATOCRIT CENTRIFUGE AND READER
22	ULTRA SONIC NEBULIZER
23	TRACTION MACHINE, INTERMITTENT
24	ELECTRO CONVULSIVE THERAPY MACHINE
25	 ELECTROMYDGRAPHIC MUSCLE TRAINER WITH MICROTHERM - MICROWAVE

GO TO RIGHT HAND PAGE

RIGHT PAGE 1	L EQUIPMENT REPAIR TASK BOOKLET
TASK NO.	ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 11 OF RESPONSE BOOKLET
26	STIMULATOR, MUSCLE
27	PROGRESSIVE WAVE GENERATOR
28	STIMULATOR, CHRONAXIE CONSTANT CURRENT
29	MEDCOLATOR
30	ULTRASONIC THERAPY UNIT
31	POCKET STIMULATOR
32	CAUTERY APPARATUS
33	PROBES, SURGICAL, ELECTRIC
34	METAL LOCATOR
35	CHAIR, SURGEON, RECLINING
36	MEDICAL UNIT, RITTER MODEL
37	DRILL, MICRO SHEA
38	CAST CUTTERS
39	STRYKER BONE SAW WITH ATTACHMENTS
40	FE TA SCOPE
41	CRYO GLAUCOMA UNIT
42	PHOTIC STIMULATOR UNIT
43	GODDART CONSTANT LOAD/VARIABLE SPEED ERGOMETER
44	HEARING AID KITS
45	ALTERNATING PRESSURE PAD AND MATTRESS
46	DRILL, ÄIR SYRYKER
47	CASTING MACHINE BROKEN ARM, KERR
48	SAW, PLASTER CAST
49	MOVIE PROJECTOR/ACCESSORIES
50	MOULAGE SET

LEFT PAGE	12 EQUIPMENT PEPAIR TASK BOOKLET
	1 ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 12
1	WHEEL CHAIR
2	IGURNEY CARTS
3	STRETCHEP, PORTABLE (AMBULANCE)
4	ORTHOPEDIC TABLES/ACCESSORIES
5	STRYKER FRAME
6	CIRCOELECTRIC BED
7	ADDRESSOGRAPH MACHINE, MANUAL
8	ADDRESSOGRAPH MACHINE, AUTOMATIC
9	BED LAMP
10	TYPEWRITER
11	II.V. POLE
12	CROUPETTE
13	MACHINE, FLOOR POLISHING
14	EXERCISE UNIT STEEL FRAME, ELGIN
15	WASHING MACHINE (CLOTHES)
16	ELECTRIC DRYER (CLOTHES)
17	VACUUM CLEANER
18	AUTOMATIC COFFEE MAKER
19	
20	TV SET. PORTABLE
21	FIELD TELEPHONE SYSTEM
22	DOOR SECURITY ALARM SYSTEM
23	STENCIL CUTTING MACHINE
24	STRAPPING MACHINE
25	TAPE MACHINE FOR PACKAGING

GO TO RIGHT HAND PAGE

RIGHT PAGE	12 EQUIPMENT REPAIR TASK BOOKLET
I TASK NO.	ENTER RESPONSES TO STATEMENTS BELOW IN RIGHT SIDE OF PAGE 12 OF RESPONSE BOOKLET
26	ADDING MACHINE
27	DUPLICATOR. E.G. MIMEOGRAPH
28	
29	AUTOCLAVE, STEAM
30	I INMEEL CHAIR

Part II C

LIST OF INSTRUMENTS AND EQUIPMENT USED

LEFT PAGE 1	3 EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 13 OF RESPONSE BOOKLET
1 !	DSCILLOSCOPE
2 (CONTINUITY TEST METER (OMMMETER)
3 ! 	AMMETER
4 i	ELECTRONIC TUBE CHECKER
5 I	SIGNAL GENERATOR
6	ELECTRONIC SWITCH
7	RESISTANCE DECADE BOX
8 i	CAPACITANCE DECADE BOX
9	ELECTRICIAN®S TOOL BOX
10	VOLTMETER
11	MEGOHMETER
12	POWERED SHARPENERS, GRINDERS AND SANDERS
13	DRILL PRESS
14	DIE SET, METAL STAMPING
15	TAP AND DIE SET
16	MACHINIST HAND TOOLS
17	MICROMETER
18	DRILL, ELECTRIC
19	CUTTING DIES
20	CHISEL, NON-SURGICAL
21	WIRE BRUSH WHEEL
22	BUFFING WHEEL
23	WALKER. CRESCENT, ADJUSTABLE WRENCH
24	 JEWELERS LATHE COMPLETE WITH ACCESSORIES
25	LATHE/MILLING MACHINE

GO TO RIGHT HAND PAGE

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LEFT PAGE	14 EQUIPMENT REPAIR TASK BOOKLET
	ENTER RESPONSES TO STATEMENTS BELOW IN LEFT SIDE OF PAGE 14. OF RESPONSE BOOKLET
1	TOOLS, WOODWORKING/CARPENTER
2	IVISE, BENCH
3	 FABRIC/LEATHER WORKERS HAND TOOLS
4	HAMMER BALL PEEN, JEWELLERS
5	JOINTER/PLANER/ROUTER
6	KNIFE, POCKET
7	BLOWTORCH, ALCOHOL
8	CUTTING KNIVES
9	COMPRESSED AIR CYCLINDER/TANK
10	BAND SAW
11	ALLEN WRENCHES
12	 VIBRO-TOOL/HAMMER DRILL
13 ,	 FILM SPLICER
14	I I VARIAC I
15	PROPANE TORCH, HAND
16	JIG SAW
17	I DXY-ACETYLENE WELDING EQUIPMENT I
18	RIPPING AND CROSS CUT SAWS
19	SPRAY PAINTING EQUIPMENT
20	 DRAFTING BOARD AND ACCESSORIES

END

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